

Remarks/Argument**In the Specification**

The paragraph beginning on page 7, line 9 has been amended to correct a typographical error.

In the Claims

By this amendment, claims 22-24 and 45-48 have been amended and claims 3-5, 16-18, 26-28, and 39-41 have been canceled. Claims 1-2, 6-15, 19-25, 29-38, and 42-49 remain for examination. No new matter has been added.

Claim Objections

Claims 3, 4, 5, 16, 17, 18, 26, 27, 28, 39, 40, and 41 have been objected to on the grounds that the features “flow sleeve,” “metering indicator,” and “marking” are not shown in the drawings. These claims have been cancelled.

Claims 1-2, 6-15, and 19-21

The Office Action rejected claims 1, 2, 8-15, and 19-21 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,542,873 to Shank in view of U.S. Patent No. 3,010,695 to Banks. The Office Action further rejected claims 3-5 under 35 U.S.C. § 103(a) as being unpatentable over Shank ‘873 in view of Banks and U.S. Patent No. 5,097,633 to Branton. The Office Action further rejected claims 6 and 7 under 35 U.S.C. § 103(a) as being unpatentable over Shank ‘873 in view of Banks and U.S. Patent No. 4,335,744 to Bey. Applicants respectfully traverse the rejections of claims 1-2, 6-15, and 19-21.

Independent claim 1 recites a media control valve that includes a valve body with a media inlet and a media outlet, a plunger, a piston, a sleeve, a housing, and a base, the sleeve including a media opening with a first portion proximate to the media outlet and a second portion that is distal to the media outlet and broader than the first portion.

Shank '873 teaches a media valve including a valve stem and sleeve, where the sleeve has circular media openings. The device of Shank '873 does not allow for metering of the abrasive flow:

Valve stem 45 does not act to meter the amount of abrasive media flowing from media passage 63, through discharge tube 42 and into air flow tube 43. Instead, valve stem 45 is an on-off valve which when retracted will allow free passage of the media from media passage 63, through discharge tube 42 and into air flow tube 43 and when closed will stop all passage of the media between media passage 63 and discharge tube 42.

(Col. 7, l. 63-col. 8, l. 3.).

Banks discloses a high pressure fluid valve that includes a sleeve 22 with openings that may be of varying shapes that are said to result in varying flow profiles. The flow in Banks is controlled by a valve closure member 10 attached to a threaded operating handle 20.

One of skill in the art would not have combined Shank '873 and Banks to arrive at claim 1, as suggested by the Office Action and, even if the combination was made, the combination would not contain all of the elements recited in claim 1. "To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure." MPEP § 2143 (quoting *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)). In this instance, there can be no prima facie case of obviousness because (a) there is no suggestion to make the combination, (b) there would be no reasonable expectation of success, and (c) these references cannot be combined in a manner that would result a device that contains all of the elements of claim 1.

Banks is directed to a high pressure fluid flow valve. (See, e.g., col. 1, ll. 9-35.) There is nothing in Banks that teaches or suggests that the port ring 22 and openings 24 of Banks, which purportedly allow for the control of fluid flow, would operate to allow metering of blast media in a media valve such as that of Shank '873. This is particularly true given that the configuration of Banks contains sharp bends that would render it unsuitable for use with the type of granular media commonly used in shot blasting equipment. As there is no teaching or suggestion in either

reference, or anywhere else in the prior art, that it would be desirable to add the fluid flow port ring and openings of Banks to a media valve such as that of Shank '873, these references cannot be properly combined.

In addition, as noted above, the device of Banks relies on the ability to move the valve closure member 10 in incremental amounts by means of the threads on cap 20. Because the media valve of Shank '873 employs an on/off valve stem 45, insertion of the Banks port ring 22 into the valve of Shank '873 would not result in a device that would allow metered flow. Thus, even if there was a suggestion to make the combination (which there is not), one of skill in the art would not have reasonably expected the combination to be a success. Importantly, it would be impermissible to wholly replace the plunger and piston assembly of Shank '873 with the valve closure member 10 of Banks, because to do so would be to change the principal of operation of the primary reference. See MPEP 2143.02 ("If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious." (citing *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959))).

Finally, even assuming a suggestion to combine and a reasonable expectation of success, any operable device that added the variable flow feature of Banks to the media valve of Shank '873 would not contain all of the elements of claim 1. As noted, without including Banks' incremental valve closure member 10, there would be no reason to make the combination because there would be no ability to vary the flow. However, adding the threadably operated valve closure member 10 and port ring 22 of Banks to Shank '873 would result in a device that does not have the claimed plunger and piston. Thus, a combination of Banks and Shank '873 would not contain all of the elements of claim 1.

For at least the foregoing reasons, claim 1 is patentable over Shank '873 in view of Banks and this rejection should be withdrawn. Because claim 1 is allowable, claims 2, 6-15, and 19-21, which depend from and contain all of the limitations of claim 1, are allowable as well.

Claim 22

The Office Action rejected claim 22 under 35 U.S.C. § 102(b) as being anticipated by Banks. Applicants respectfully traverse this rejection

Amended independent claim 22 recites a valve including, among other features, a flow path having a substantially linear axis. As Banks does not disclose, teach, or suggest a valve with a flow path having a substantially linear axis, Banks does not contain all of the limitations of amended claim 22 and this rejection should be withdrawn.

Claim 23

The Office Action rejected claim 23 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,355,744 to Bey. Applicants respectfully traverse this rejection.

Amended independent claim 23, like claim 22, includes a flow path having a substantially linear axis. Because Bey, like Banks, does not disclose, teach, or suggest a valve with a flow path having a substantially linear axis, Bey does not contain all of the limitations of amended claim 23 and this rejection should be withdrawn.

Claims 24, 25, 29-38, and 42-44

The Office Action rejected claim 24 under 35 U.S.C. § 103 as being unpatentable over Shank '873 in view of Bey. Applicants respectfully traverse this rejection.

Amended independent claim 24 recites a flow path having a substantially linear axis. As neither Shank '873 nor Bey discloses, teaches, or suggests a flow path having a substantially linear axis, amended independent claim 24 is patentable over this combination.

Because claim 24 is allowable, claims 25, 29-38, and 42-44, which depend from and contain all of the limitations of claim 24, are allowable as well.

Claims 45-47

The Office Action rejected claims 45-47 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 671,303 to Warren or U.S. Patent No. 4,534,139 to Desjardins.

Applicants respectfully traverse these rejections.

Amended independent claim 45 recites a media control system that includes, among other features, a media flow path having a substantially linear axis and a gentle seal. As neither Warren nor Desjardins discloses, teaches, or suggests a flow path with a substantially linear axis and a gentle seal, amended independent claim 45 is not anticipated by either reference and this rejection should be withdrawn.

Because amended claim 45 is allowable, claims 46-47, which depend from and contain all of the limitations of claim 45, are allowable as well.

Claims 48-49

The Office Action rejected claims 48-49 under 35 U.S.C. § 102(b) as being anticipated by Banks. Applicants respectfully traverse these rejections.

Amended independent claim 48 recites a media control valve that includes, among other features, a media flow path with a substantially linear axis and a gentle seal. As Banks does not disclose, teach, or suggest a media flow path with a substantially linear axis or a gentle seal, amended independent claim 48 is not anticipated Banks and this rejection should be withdrawn.

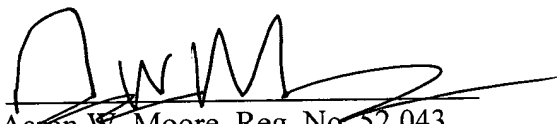
Because amended claim 48 is allowable, claim 49, which depends from and contains all of the limitations of claim 48, is allowable as well.

CONCLUSION

In view of the foregoing amendments and remarks, this application should now be in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes, after this amendment, that the application is not in condition for allowance, the Examiner is requested to call the Applicant's attorney at the telephone number listed below.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicants hereby request any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 50/2762.

Respectfully submitted,

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